CLAIMS

What is claimed is:

1. An apparatus, comprising:

a vacuum chamber wall defining a main cavity and an opening;

an exhaust port in fluid connection with the central cavity for establishing a vacuum in the main cavity; and

a cover for sealing the opening when the cover is supported by the chamber wall, comprising:

a first section adjacent to the main cavity;

a second section on a side of the first section opposite of the main cavity; and

a pocket between the first section and the second section.

2. The apparatus, as recited in claim 1, further comprising a critical element supported by a region of the first section.

3. The apparatus, as recited in claim 2, wherein pocket extends above the region of the first section upon which the critical element is supported.

4. The apparatus, as recited in claim 3, further comprising a channel extending from the main cavity to the pocket.

5. The apparatus, as recited in claim 4, wherein the first section of the cover is supported by the chamber wall.

6. The apparatus, as recited in claim 5, wherein the second section is supported by the first section.

7. The apparatus, as recited in claim 6, wherein the critical element is an electrode.

8. The apparatus, as recited in claim 7, further comprising a radio frequency power source electrically connected to the electrode.

9. The apparatus, as recited in claim 8, wherein the cover further comprises a vacuum tight seal between the first section and the second section.

10. The apparatus, as recited in claim 1, further comprising a channel extending between the pocket and the main cavity.

11. The apparatus, as recited in claim 10, wherein the pocket extends substantially across the opening.

12. The apparatus, as recited in claim 11, wherein the cover further comprises a vacuum tight seal between the first section and the second section.

13. The apparatus, as recited in claim 10, wherein the cover further comprises a vacuum tight seal between the first section and the second section.

14. A method for creating a vacuum in a chamber, comprising

providing a chamber wall defining a main cavity with an opening;

providing a cover across the opening, wherein the cover comprises:

a first section adjacent to the main cavity;

a second section on a side of the first section opposite of the main cavity; and

a pocket between the first section and the second section;

evacuating gas from the main cavity through the exhaust port, so that the second section deforms; and

using the pocket to reduce the deformation of the first section.

15. The method, as recited in claim 14, further comprising connecting a critical element to the first section of the cover.

16. The method, as recited in claim 15, further comprising providing a channel between the pocket and main cavity.

17. The method, as recited in claim 16, wherein the pocket extends substantially across the opening.